

LOAD RUNNER

THE GALAXY'S FIRST COMPUTER COMIC

MIKE ROMAN'S TIME AS 'BYTE KILLER' IS FINISHING - THE **LOAD RUNNER** IS ABOUT TO BE BORN!

**FIRST
GREAT
ISSUE**

IT ALL BEGAN ONE MORNING IN LATE JUNE, WHEN MIKE ROMAN, MICRO MECHANIC, AND TROUBLE SHOOTER FOR LONDON REPAIRMEN, WAS DRINKING HIS LAST CUP OF COFFEE...

A REPRESENTATIVE FOR THE DELEGATION SAID THAT THEY WERE FIERCELY OPPOSED TO ANY ATTEMPTS TO FURTHER ERODE THE POSITION...



**WIN A SORD M5
COMPUTER**

in our amazing competition!



**THE ARCADIAN
ARE COMING**

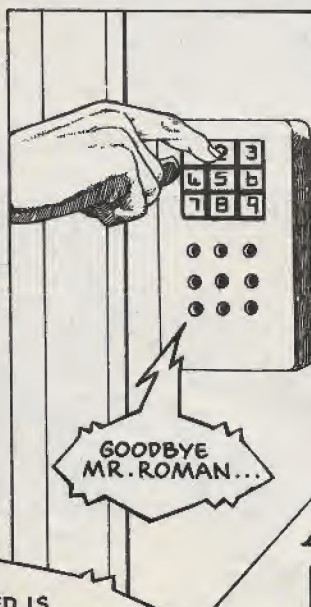
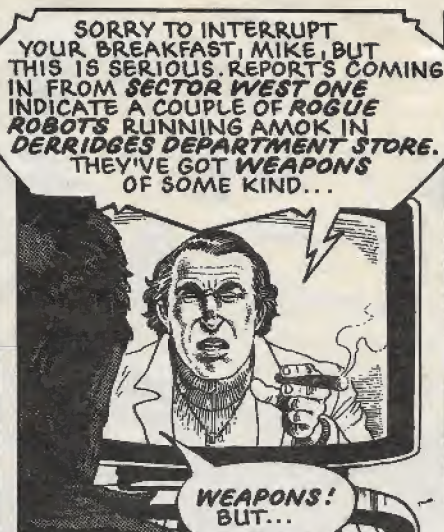
to WARP your MIND



**CHRIS CROSS
OF ULTRAVOX**

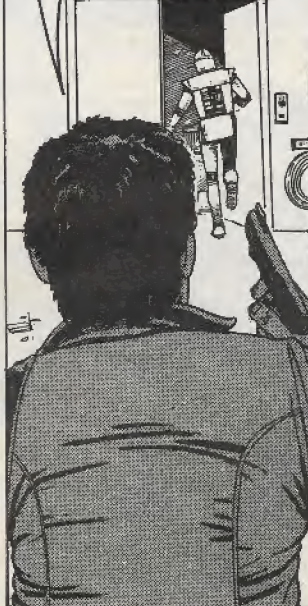
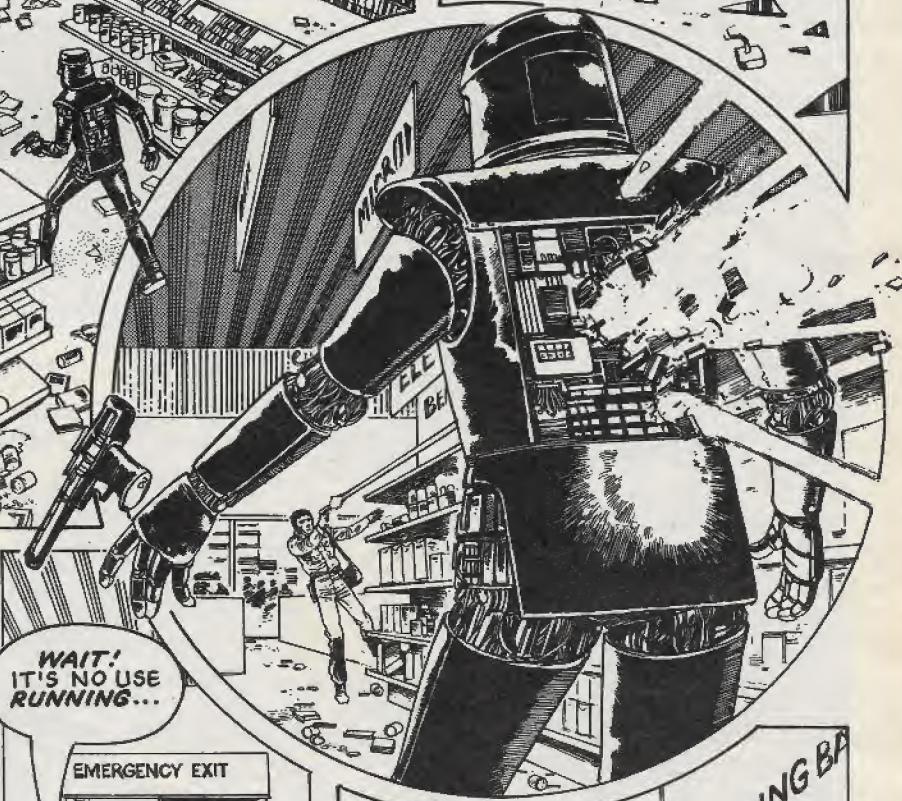
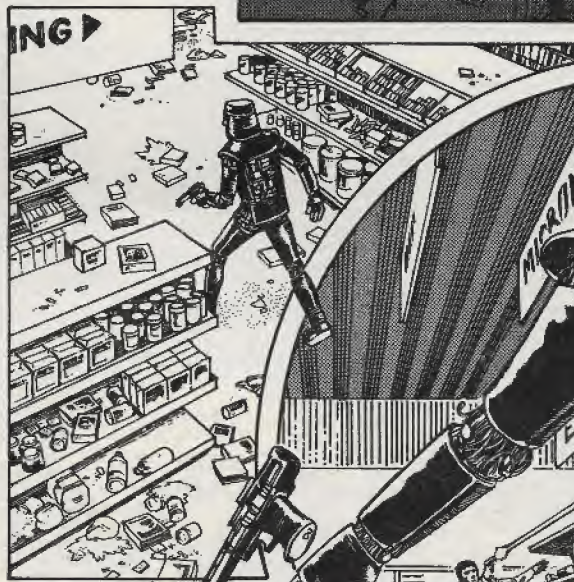
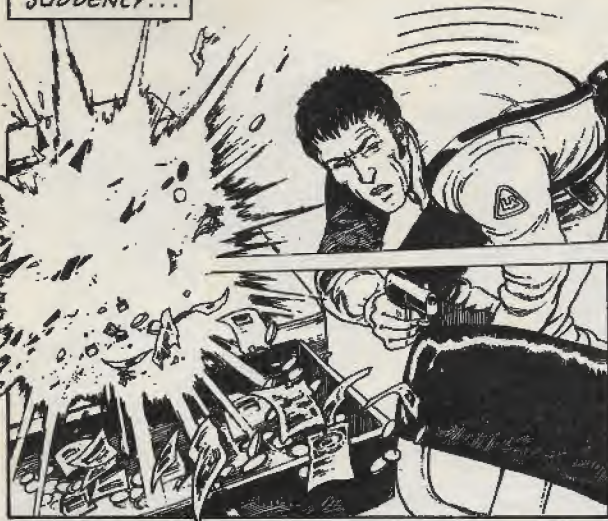
gets the computer bug





SCRIPT—
BILL SCOLDING
ARTWORK—
PETER DENNIS
LETTERS—
STEVE POTTER

SUDDENLY...



LOAD RUNNER





£14.95

The affordable FORTH



FORTH

: A full implementation of this very fast running language. Ideal for writing fast moving arcade type games. Allows the full colour and sound facilities of the Spectrum to be used. Future Microdrive enhancements will be made available. 48K Spectrum only.

14.95



Chess 1.4

: 10 Levels m/c. Graphic screen display. 16K ZX81 only.

8.95



Invaders

: Very fast m/c action. Includes mystery ship and increasingly difficult screens. 16K ZX81 only.

4.45



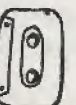
Mazeman

: A fast action m/c game that reproduces the spirit of the original. The Spectrum version includes excellent graphics and sound. 16K ZX81 & 16/48K Spectrum.

ZX81

4.45

4.95



Adventure 1

: Based on the original game by Crowther, this game was the start of the Adventure craze. Reviewed Sinclair User, Iss.2. Features Save game routine as the game can literally take months to complete. 16K ZX81 & 48K Spectrum.

ZX81

8.95

9.95

ABERSOFT

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TUNNEL ESCAPE
BARREL JUMP
CANNONBALL BATTLE
OVERTAKE
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SMASH THE WINDOWS
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JET FLIGHT
PHASER
INTRUDER
INFERNO
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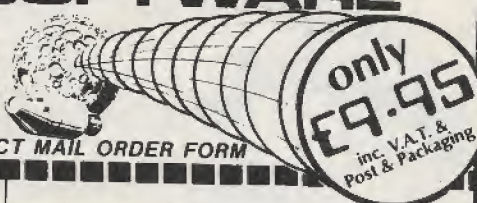
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COMPUTER

Name _____

Address _____

LR1

Welcome to **LOAD RUNNER** THE GALAXY'S FIRST COMPUTER COMIC

WELCOME to the first printout of **LOAD RUNNER**, the galaxy's first computer comic.

I am the **CONTROLLER**, and it is my function to ensure that each fortnight we input the finest story-programs and fact routines.

Every possible check will be made to ensure the output will be of the highest quality but **YOU** are the judges. If there is anything good or bad you want to say, write to me. I will award three pounds for every letter printed.

Also write to **BRAINY** (see program 27), who has the knowledge to solve even the most awkward computer problem, whether it be a programming poser or a question on how to persuade your father to buy you a printer.

Be sure to buy every printout of **LOAD RUNNER** — remember to order it from your newsagent — because there will be fabulous prizes to be won in our special competitions.

I am offering a special bonus to those of you who buy the first four issues. Simply collect the tokens printed each week, send them to me and you will receive your own **LOAD RUNNER SECURITY PASS**. The first token is printed below.

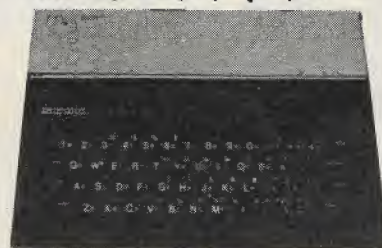
This will open the doors to untold adventure. Security pass holders will be first in the queue as we delve into the super-scientific world of computers. I am constantly online to the major forces in the computer world and I intend to make their work more accessible to you.

Remember, it is my task — and that of my programmers and operators — to perform as would a well-designed computer. We will be easy to access, useful to own and fun to play with.

THE CONTROLLER.



Sord M5



Retailing at £189, the Sord M5 is an advanced computer that anyone can operate easily.

Ideal for games playing, it can also be used for keeping household accounts and for bank loan management. It can even handle simple data processing.

The Sord M5 has the following features:

- Typewriter-like keyboard.
- 8K ROM
- 4K RAM
- 16K Video RAM
- Sound generator
- Colour graphics

It can be used with a domestic TV, and is compatible with an ordinary cassette tape recorder.



BUGSY MALONE, always the sharpest of dudes, is right up to the minute with the behind-the-scenes organisation of the West End's new hit musical—he's computer-organised.

The show director, Michael Dolenz, pictured left with Bugsy, uses a Sord home computer to help him arrange the complicated rehearsal schedules as well as maintain a highly-efficient catalogue and easy reference to talented youngsters all over the country. He says:

"I used a Sord both for home and work long before I started on the stage version of *Bugsy Malone* and it has always been invaluable. Since I started working on transferring Bugsy from film to stage it has been like an extra right arm.

"The auditions alone attracted more than 10,000 children and in each cast there are 48 boys and girls. I don't think I could have organised the rehearsal schedules and had anything like a proper system without it."

Sord is the major investor in *Bugsy Malone*, which is receiving standing ovations from capacity audiences at Her Majesty's Theatre. The transfer of Alan Parker's film with splurge guns, pedal-car chases and characters such as Bugsy, Fat Sam, Tallulah, Dandy Dan, Blousey Brown, Fizzy and Knuckles, has been acclaimed as a triumph by adults as well as youngsters.

Competition

TO COINCIDE with the stage version of *Bugsy Malone*, *Load Runner* is offering three Sord M5 computers, plus free tickets to the show to the winners of this easy-to-do competition. The three first-prize winners will each receive a Sord M5 computer, plus a ticket to a matinee performance of *Bugsy Malone*. The three runners-up will each receive a free ticket to the same performance. Free tickets will also be provided for a parent or guardian to accompany each prizewinner.

All prizewinners will be given a guided tour of the Sord London showrooms, where they will receive hands-on experience of the Sord M5 computer before attending an afternoon performance of *Bugsy Malone*.

Send your entries to:

Bugsy Malone Competition,
Load Runner,
ECC Publications,
30-31, Islington Green,
London N1 8BJ.

to arrive not later than Friday, July 8.

The usual rules of the editor's decision being final, and employees of ECC Publications and of Sord Computers being ineligible, apply.

How to enter

To the right are listed the surnames of several notorious American gangsters. All you have to do is to supply the popular names by which they were known. The first one has already been completed for you.

MACHINE GUN	KELLY
.....	FLOYD
.....	NELSON
.....	LUCIANO
.....	PARKER
.....	BARROW
.....	BARKER

As a tie-break, if one is necessary, complete the following sentence in not more than 12 words:

If I had a Sord M5 I would

Name.....

Address.....

..... Age

Second
Edition Just
published

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The author, Dennis Jarrett, is a successful journalist who was also founder editor of Which Computer? magazine — so his first edition quickly became a standard work. Now this new, substantially enlarged and revised edition covers the latest trends, terms and technology with the relevant facts — and **ONLY** the relevant facts — in **plain English**.

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Send to: _____ (please print clearly)
ECC PUBLICATIONS LIMITED
30-31 Islington Green
London N1 8BJ



TIME FLYING



WHAT DID YOU SAY YOU WERE DOING TONIGHT?

UPDATING MY NOTES ON THE ACRON 90.



ACRON 90?

IT'S MY COMPUTER.

HE PUTS ALL HIS NOTES ON IT... FRENCH, MATHS AND BIOLOGY.

WHEN IT COMES TO 'O' LEVELS HE'S GOING TO SNEAK IT INTO EXAMS AND PRINT OUT PERFECT ANSWERS!



IF I HAD A DISC DRIVE I'D DO THE SAME WITH MY NOTES, IT SAVES A LOT OF WRITING.

YOU OUGHT TO BUY ONE.

NO, I CAN'T AFFORD IT.

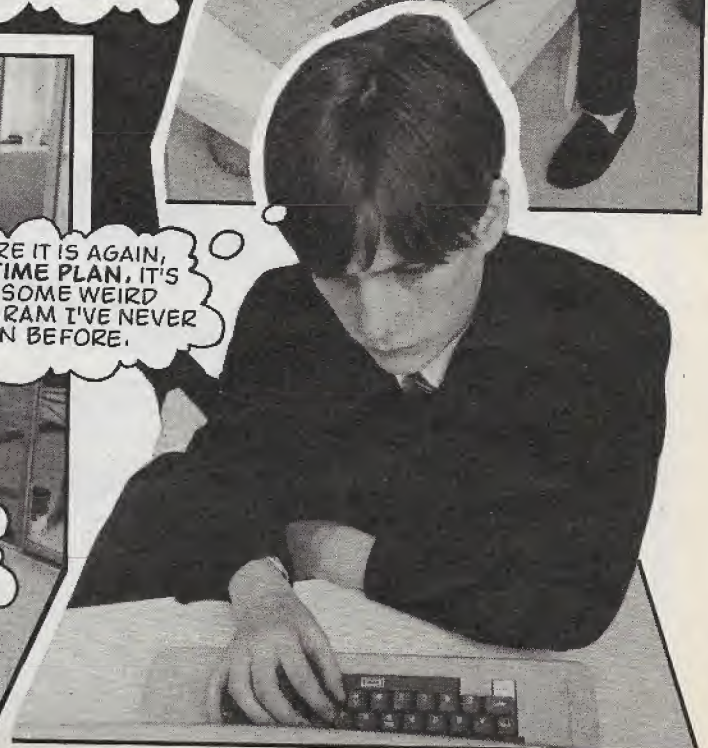
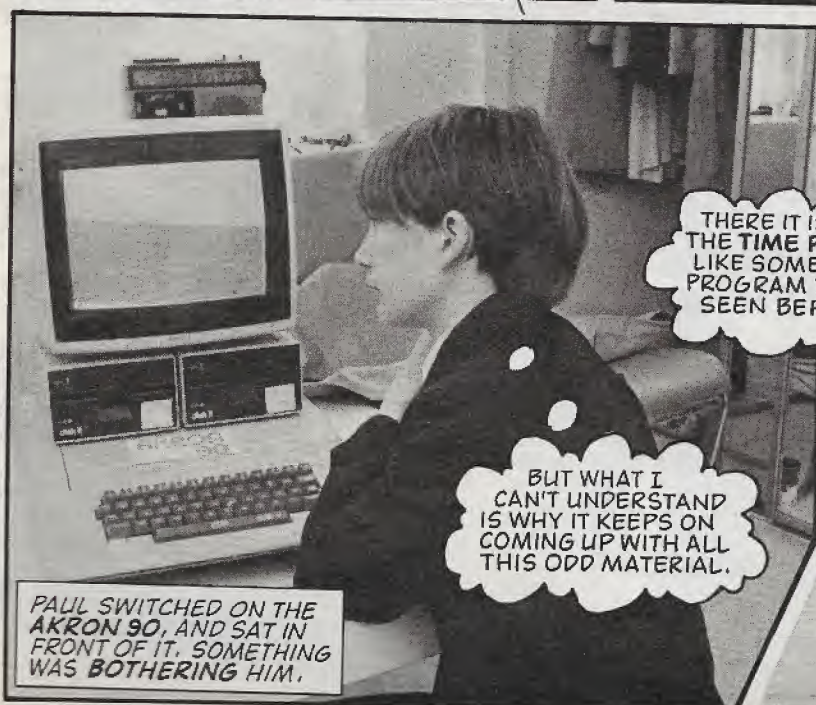
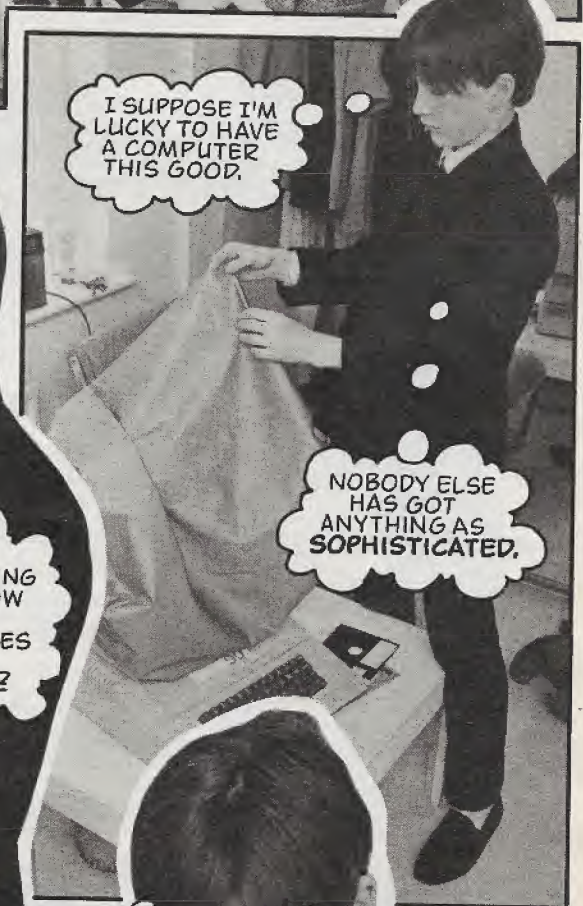


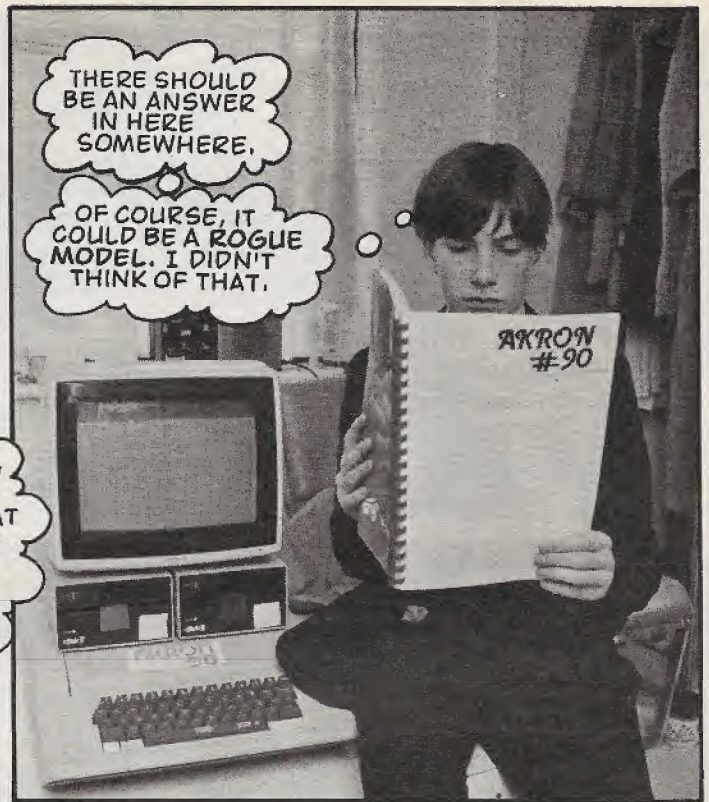
DON'T YOU PLAY GAMES ON IT THOUGH?

YEAH, ALL THE TIME.

STORY-
FRANK HOPKINS
PHOTOS-
HENRY ARDEN
LETTERS-
STEVE CRADDOCK







BUT AS PAUL LEFT THE ROOM, THE COMPUTER SUDDENLY FLICKERED INTO LIFE.



TIME PLAN 1 - THE 4TH DIMENSION

21 282 26
344 56 666 879

435 487 231
321 763 348

254 665 66
767 666 55

657 76 333

EVEN THOUGH IT HAD BEEN TURNED OFF, SOME MYSTERIOUS FORCE WAS DRIVING ITS CIRCUITS!

NEXT ISSUE - THE AKRON 90 HAS MORE SURPRISES IN STORE FOR PAUL AND HIS FRIENDS!

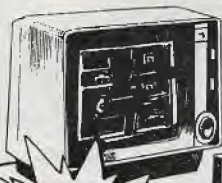


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on 1 tape!
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to be the best
Arcade game
I've played on
my ZX81.
ALL MACHINE
CODE!!



and this
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is terrific
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and

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white out

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At the back of the ZX Spectrum the
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LR

R & R

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Sinclair User Dec '82)



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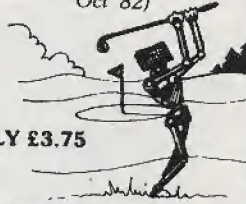
- DEFINED SCROLL REGION 1 line to
whole screen. ■ SCROLL up or down.
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16K Spectrum GOLF

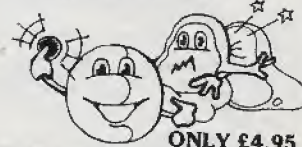
Hi-Res Full colour graphics.
A game for 1 or 2 players.
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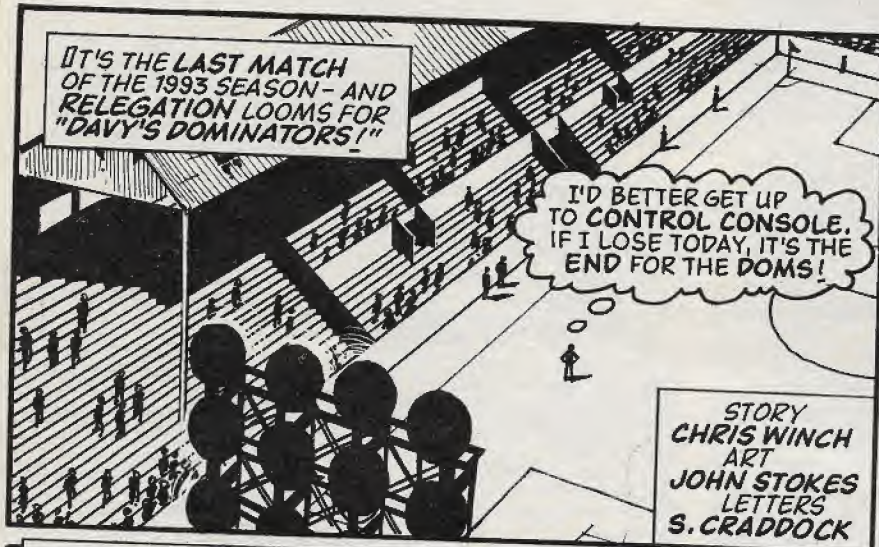
Send to: **R & R SOFTWARE (LR)**
34, Bourton Road,
GLOUCESTER GL4 0LE
Tel: GLOS (0452) 502819

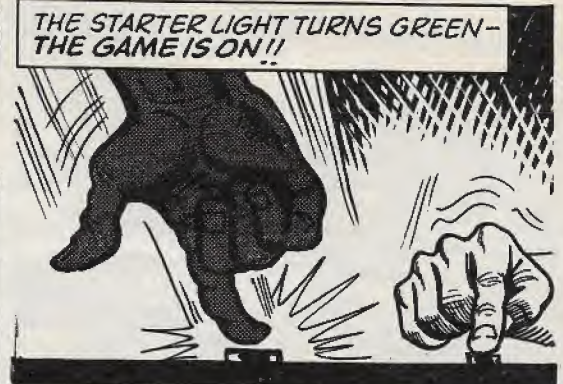
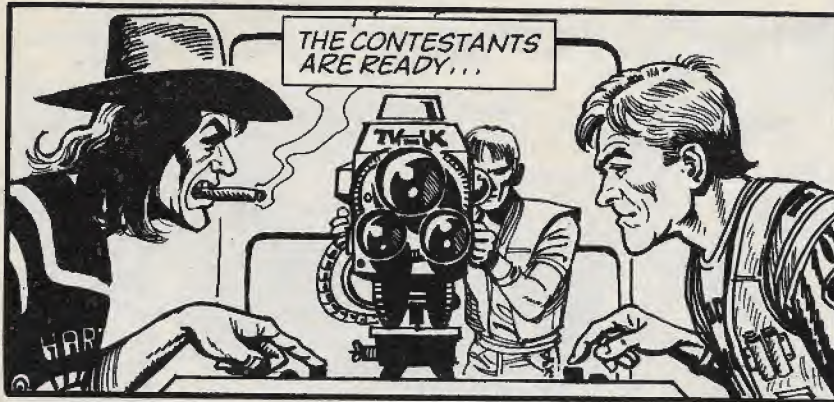
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**ZX
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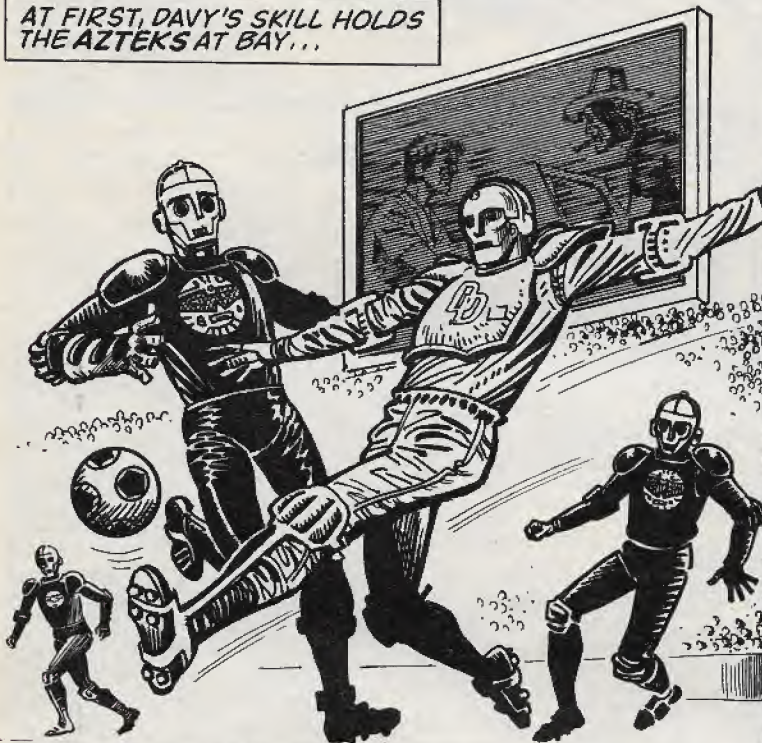
Andy Royd - the DOMINATORS

Rogue star!





AT FIRST, DAVY'S SKILL HOLDS
THE AZTEKS AT BAY...



...BUT HIS ROBOPLAYERS ARE NOT
AS QUICK TO RESPOND AS THE
AZTEKS NEWER MODELS...



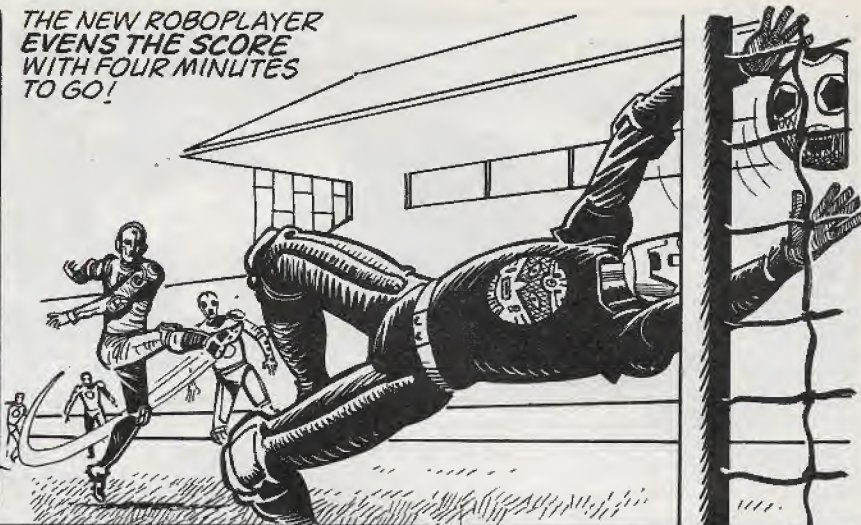
HARTFORD IS SURPRISED!



SO, DAVY, YOU'VE MANAGED TO GET A SPARE ROBO-PLAYER FROM SOMEWHERE! BUT IT'S NOT GOING TO DO YOU ANY GOOD, LITTLE MAN!

JUST PLAY THE GAME, HARRY...

THE NEW ROBOPLAYER EVENS THE SCORE WITH FOUR MINUTES TO GO!



THE ROOM IS SUDDENLY BUZZING WITH EXCITEMENT!

WELL, WELL! THAT WAS A NEW MOVE! BUT REMEMBER, A DRAW IS NOT GOOD ENOUGH!

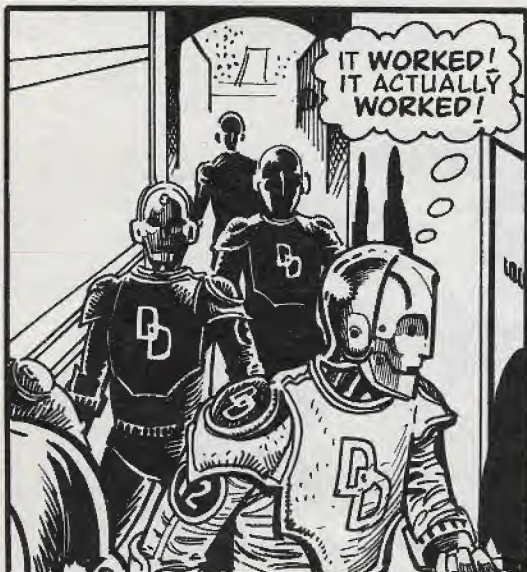


HE'S RIGHT! AND I'M RUNNING OUT OF TIME!

GOAL! THE DOMS ARE SAVED!



THE CROWD GO WILD!



IT WORKED! IT ACTUALLY WORKED!



THAT WAS THE TOUGHEST TEN MINUTES OF MY LIFE!

NEXT ISSUE > ANDY'S SECRET!

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WINNING
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VIC-20

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The Astounding World of Computafax



COMPUTER ERRORS can be costly. When the *Mariner 1* spacecraft was launched from Cape Canaveral at 4.21am on July 22, 1962, its intended mission was to photograph the planet Venus. Unfortunately, a minus sign wrongly-placed in the ground control computer program set off a dynamite charge in the Agena B 100ft. booster rocket 100 miles above the Atlantic, causing it to crash four-and-a-half minutes after blast-off. The cost of that misplaced minus sign—\$10 million.



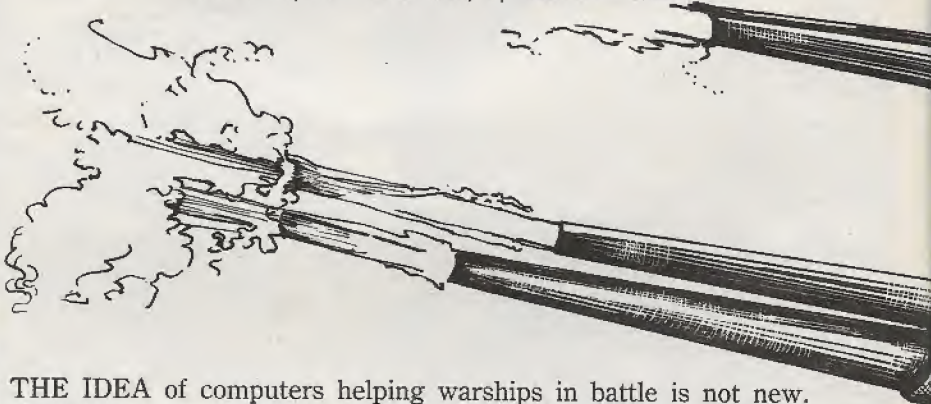
DID YOU KNOW that Walt Disney Productions is one of the biggest users of computers in the world? The one-billion-dollar EPCOT centre at Walt Disney World in central Florida, for example, is not only run by computers—it also makes extensive use of them to provide entertainment.

An amazingly life-like computerised model of Benjamin Franklin even struts across a stage before, unbelievably, walking upstairs.

Walt Disney envisaged EPCOT in great detail as long ago as 1965 but the project did not begin until late 1979.

There is a growing legend at Disney that its then president, Card Walker, told the contracted construction firm that EPCOT had to open, without fail, at 9 o'clock on October 1, 1982. The firm's official replied that it scarcely seemed sufficient time. Card stared at him and said: "How about 9.30?"

EPCOT, which stands for the Experimental Prototype Community of Tomorrow, opened on time.



THE IDEA of computers helping warships in battle is not new. Nearly 50 years ago, ships of the Royal Navy used a strange 'electronic computer' to control gunfire. Not surprisingly the device was called a Fire Control Clock and it was operated by a team of men who fed into the clock instructions which took account of distance, elevation of the ship and the wind. That produced quick and accurate gunfire which helped maintain Britain's superiority on the high seas.

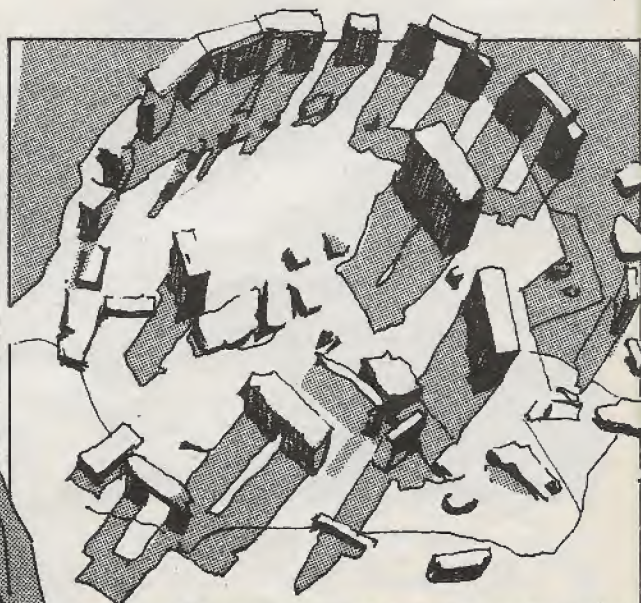
The Computer Story

A HISTORY OF COMPUTERS
PART ONE

THE WAY WE USE COMPUTERS TODAY TO COLLECT, STORE AND PROCESS INFORMATION—FOR TEACHING, WORD PROCESSING, GAMES, AND CONTROLLING MACHINERY—IS A SPIN-OFF FROM THE NEED TO COUNT AND CALCULATE. IN FACT, THE WORD "COMPUTE" MEANS TO CALCULATE.

IN THE BEGINNING...

PEOPLE STARTED TO COUNT WITH THEIR FINGERS THOUSANDS OF YEARS AGO. WHICH IS WHY NUMBERS ARE USUALLY REPRESENTED IN "BASE-TEN" (10, 20, 30 ETC.). AS THEY RAN OUT OF FINGERS, THEY MADE UP THEIR NUMBERS WITH PEBBLES AND ROCKS.



PRIMITIVE MAN WAS NOT AS BACKWARD AS WE ONCE THOUGHT. IT SEEMS LIKELY THAT STONEHENGE WAS NOT A TEMPLE, BUT AN INGENUOUS AND PRECISE STONEAGE COMPUTER THAT HELPED WORK OUT PLANTING SEASONS AND PREDICT ECLIPSES OF THE SUN AND MOON.

DID YOU KNOW that mice have baffled one of the most sophisticated computer security systems in the world? The Air France computer centre is so top-secret that even French journalists are not permitted to visit it, or reveal its whereabouts.

One of our reporters gained entry for a short visit. He was impressed by the multi-million-pound array of electronic detection equipment which keeps out terrorists but was surprised to note that intruders had already succeeded in getting through the security system. The tell-tale sign at every door was a small pile of mouse poison.

A spokesman for the airline explained: "Nothing in life is perfect but we are safe unless there is a new breed of tiny terrorists".

● Are you worried about where your **PIXELS** are? Do you know when to **PEEK** and when to **POKE**? Those words are buzzwords and the jargon of the computer world. They can be very confusing at first. Starting today, *Load Runner* will serialise a glossary of computing terms, beginning with **ABORT** and running all the way to **ZILOG**. Get buzzing.

● **Abort.** To stop a computer program if there is an error. The computer will stop performing any work it has been given.

● **Access time.** The time taken by the computer to find a bit of information or a program stored on a cassette tape or on a floppy disc.

● **Accuracy.** The maximum length of a number which a computer can store. Some computers can store only numbers which are eight digits long, such as 12345678, but others can store numbers 10 digits long, 1234567890.

● **Adapter.** A device which will allow two pieces of equipment, such as a joystick and a computer, to be joined so that they can work together.

● **Add-on.** A piece of equipment, such as a joystick or a printer which can be attached to a computer.

● **Address.** The computer needs to know where all the information stored in memory is located. It gives each memory location an address so that it can specify which bit of information it needs by using that ad-

dress. The address is only a number and usually starts at 0000 and continues upwards. In the same way the Post Office needs a postal address to send you letters.

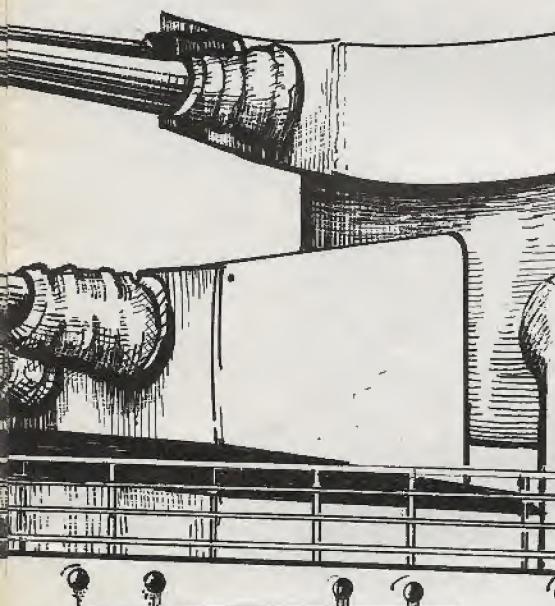
● **Algorithm.** A method of solving a problem. For instance, we may want to know how to add two numbers, 2 and 3. The algorithm we use to find the answer is $2+3$.

● **Alphanumeric.** A string of characters, such as AB2CDE4, which contains letters of the alphabet and numbers.

● **Alu.** Arithmetic-Logic Unit. A device in the computer which does all the mathematical calculations, such as adding or division.

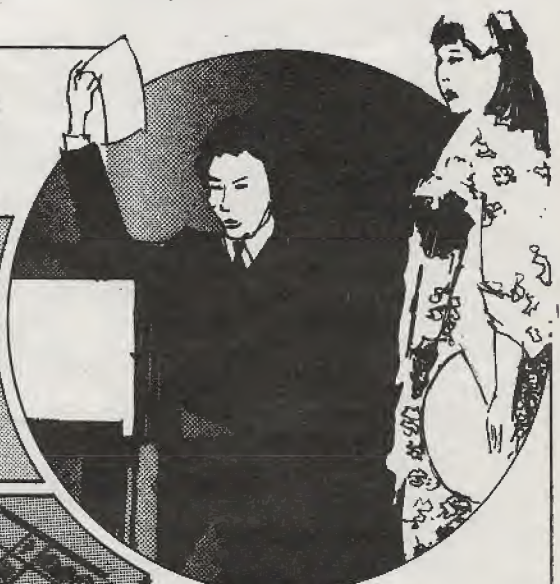
● **Application.** A way in which the computer can be used. For instance the games of computer chess and space invaders are two applications.

● **Architecture.** The physical design of the computer. It incorporates the keyboard, the ALU chip, the memory used, and even the keyboard casing.



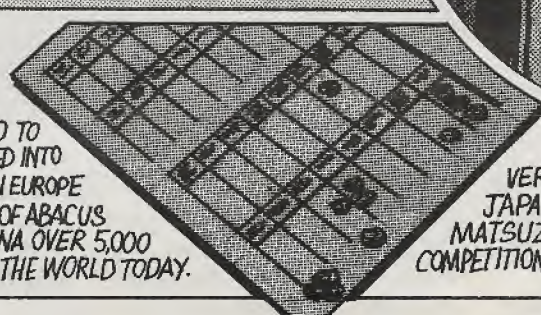
BELOW—HOW THE ABACUS WORKS. A COUNTER PLACED ON A LINE REPRESENTS "ONE" OF THAT DENOMINATION. COUNTERS PLACED BETWEEN THE LINES REPRESENT "HALF" VALUES—FIVE, FIFTY, FIVE HUNDRED ETC.

—●—●—	THOUSANDS
—●—●—	HUNDREDS
—●—●—	TENS
—●—●—	UNITS
2 7 3 4	TOTAL



A SKILLED PERSON CAN CALCULATE VERY FAST WITH AN ABACUS. IN 1946 A JAPANESE CLERK NAMED KIYOSHI MATSUZAKI USED AN ABACUS AND WON A COMPETITION AGAINST AN ELECTRIC CALCULATOR.

THE ABACUS WAS THE EARLIEST SYSTEMATIC AID TO CALCULATION. ORIGINALLY OF STONE, IT DEVELOPED INTO THE WOODEN COUNTING TABLES (RIGHT) USED IN EUROPE TIL THE 16TH CENTURY. THE BEST-KNOWN FORM OF ABACUS IS THE COUNTING FRAME (ABOVE). USED IN CHINA OVER 5,000 YEARS AGO, IT'S STILL USED IN MANY PARTS OF THE WORLD TODAY.







ULTRAVOX has been experimenting successfully with electronic music for almost a decade and has a string of hit singles and albums to show for it. Recently Chris Cross, pictured here below, who has played bass and keyboards with the band since it first got together, decided to do some leisurely experimenting of his own with a Sinclair ZX-81 personal computer.

Though critical of the ZX-81 keyboard, Chris was nevertheless impressed with it as a quick introduction to computing. "It has an element of fun to it, it's for real, but it's also a toy, which makes it very accessible; and, of course, it's cheap."

Zapping aliens and exploring dank dungeons in the brief moments snatched between recording in the studios and touring overseas, Chris has quickly become a dedicated computer fan and now plans to replace his trusty Sinclair with something much bigger, possibly a BBC micro.

Meanwhile Ultravox, too, moves from strength to strength and its new album, *Rage in Eden*, is sure to re-affirm its position as "Britain's premier electronic band".

ULTRAVOX



COUNT DOWN TO CHAOS

by Philip Steele

There was no one to see the light-show close at hand. In the vast emptiness of space there was simply a great flare of white light in the blackness—gas and dust particles wheeling through the solar system, trailing a long misty tail.

The comet was spotted from Earth, of course; the first reports were from Australia. As the light grew brighter it was clear that the comet would pass very close to Earth. Experts argued how close was close. Some people said it would result in a year of rain and bad weather. Well, in Britain that was nothing unusual and soon the subject was forgotten.

As the comet drew close to Earth, it exerted an extraordinary, powerful influence; not on the weather—there were no storms or hurricanes; not on humans—although millions of humans were to suffer tragically. The reaction took place deep in the ancient rocks of the Earth. How it happened was never really discovered but it was the comet which triggered off the bacteria, there could be little doubt about that. . .

It was a day like any other. To start, Ellie overslept and blamed Joe for not waking her earlier. Dad burned the toast and then hid behind his newspaper at the breakfast table.

"What's going on out there in the world, then?" Joe asked him, scraping at his burnt offering.

"Umph?". The usual response.

"I said what's in the newspaper, dad?".

"Oh, the usual. Rovers heading for the fourth division. The Prime Minister thinks he's got problems. A new space shuttle flight. Some comet's about to engulf the world in flames".



"I don't believe it", he spluttered.

"What?" said Ellie.

"A comet. Well, of course, it's not actually going to hit us. Or set us ablaze. But they say it's passing very close". Dad gulped at his tea.

"Now, in the old days that would have been taken as a proof of the end of the world or some kind of disaster. People thought comets were signals from the gods. Now

As the light grew brighter
it was clear that the comet
would pass very close to
Earth.

we know they're just great splodges of gas shooting through space".

"What are you on about now?" interrupted Mum, going through the door with a pile of washing. "Are you going in for Mastermind or something? Or are you going



to be the first British spaceman? Spacemen probably get better pay than car workers—you should apply for a government re-training scheme. Oh, well. If you're so clever, perhaps you could tell me why the washing machine has gone crazy. It's been washing away all night—Joe's football shirt has shrunk to nothing”.

“Oh, no”, wailed Joe. “It's the match this afternoon”.

“Well, it's not my fault”, said Mum. “You'll just have to borrow a shirt”.

A flurry of barking from the hall drowned Joe's complaints as the dog welcomed the postman in the usual way. Ellie went to fetch the post and threw two letters on the table. Dad wiped the marmalade from the postmark and opened them.

“I don't believe it”, he spluttered.

“We've won the pools?” asked Mum sarcastically.

“As good as. There's an extra grand on my bank statement this month. One thousand pounds. Oh, I suppose the bank will find their mistake soon enough. What's this?” he exclaimed as he opened the second

envelope. “An electricity bill for £79,000? What's going on? Damned computers. They never get a thing right. I'll have to phone now”.

“It's not the fault of computers, dad”, said Ellie. “A computer is only as good or bad as its program and programming is still done by humans. Computers are really useful; think where you'd be at work without computers. They design your cars, they even build them. Soon we'll all have computerised robots in the house and none of us will have to bother about household chores again”.

“Some of us don't bother very much already”, said Dad. “Off to school with you”.

“How was the match?” Ellie met Joe on the top of the bus on the way home. It had been a hard day.

“Oh, we won 2—0. I had to borrow Fatso's shirt. I looked dead stupid”.

“We had a really weird day”, said Ellie. “It was the maths test; right. Old Crabtree said we could use our calculators for questions five and six but none of them would work—mine kept multiplying instead of dividing. He said we'd all have to use long division but none of us could remember how to do it.

“Crabby went on and on about how in his day people had to use their brains and all that rubbish. Then this afternoon we were working on the computer with Miss

“What's going on, Joe?
Hasn't anyone else noticed?
The computers have all gone
crazy”.

Macrombie. I made some mistakes and got a real earful from her but she wasn't any better—she had a go and the whole VDU went berserk”.

“Trouble is”, said Joe, “we both go to a lousy, penny-pinching dump of a school. Nothing ever works. What's the time, anyway?”

“Dunno. That's funny, my watch has stopped. My brand new super digital waterproof shockproof . . .”

“Oh, shut up”, said Joe “The point is we're late. This traffic's a mess”.

“It's the traffic lights”, said the conductor. “On the blink. All over town”.

“Joe”, said Ellie. “I think I've just had a funny idea”.

“Sure you have”, said Joe.

“Look—these things breaking down at school. They're all electronic gadgets, right? And my watch?”

“Hey, that's right”, said Joe. “And isn't traffic flow controlled by computer? And remember the washing machine at home? And Dad's post this morning?”

“What's going on, Joe? Hasn't anyone else noticed? The computers have all gone crazy”.

Joe and Ellie left the bus to the traffic jam and began to walk home. Suddenly they bumped into their father walking in the other direction.

“Back from work already?” chorused Joe and Ellie.

“Bad trouble at work”, said Dad. “Been off since lunch. Total shut-down. Going back to lock up now”. He hurried off into the crowds.

Joe looked at Ellie and shook his head. “Oh Ell, I just don't like the sound of all this”, he said. “Not one little bit”.

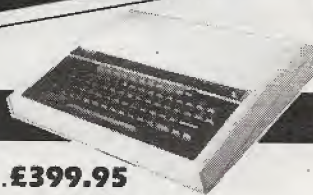
CONTINUED IN NEXT ISSUE!

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BBC Model B..... **£399.95**
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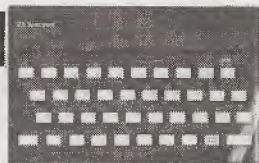
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NEW BRAIN

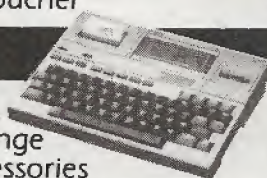
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Epson HX20..... **£462.00**
Plus probably the largest range of Epson software and accessories including compatible typewriters and printers



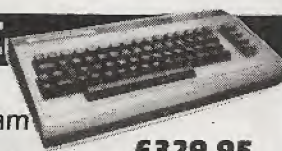
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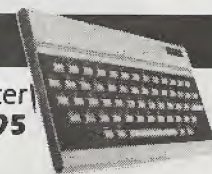
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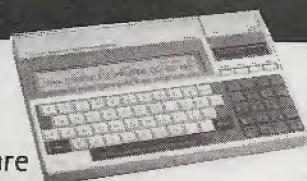
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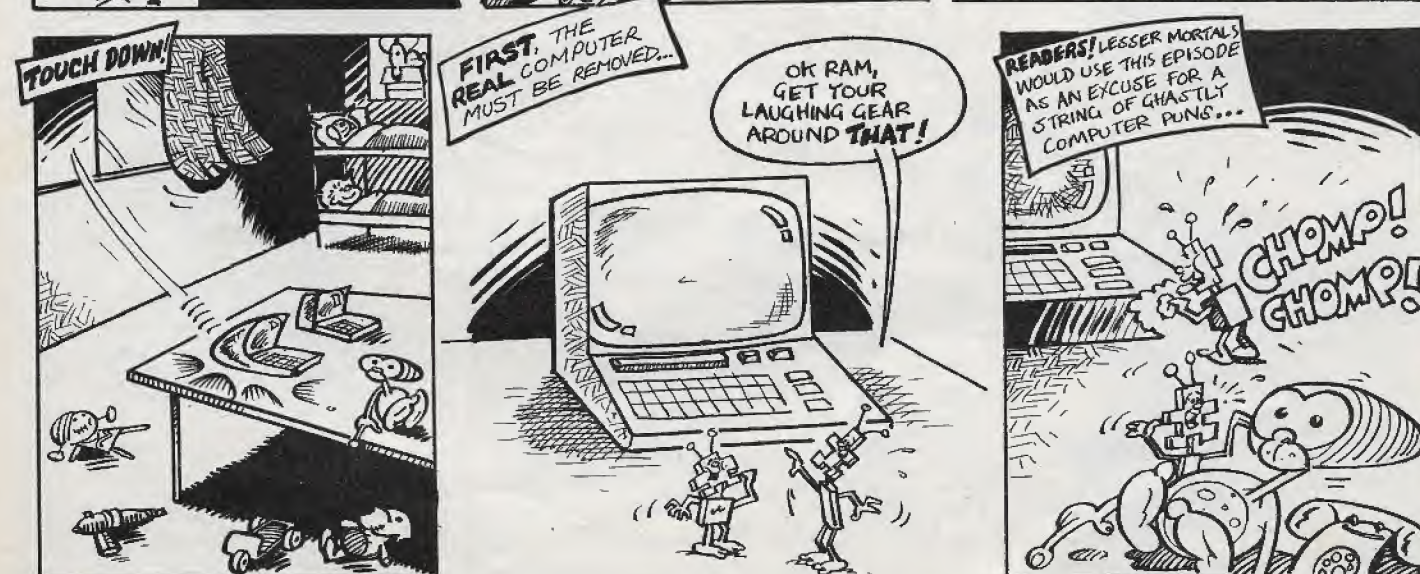
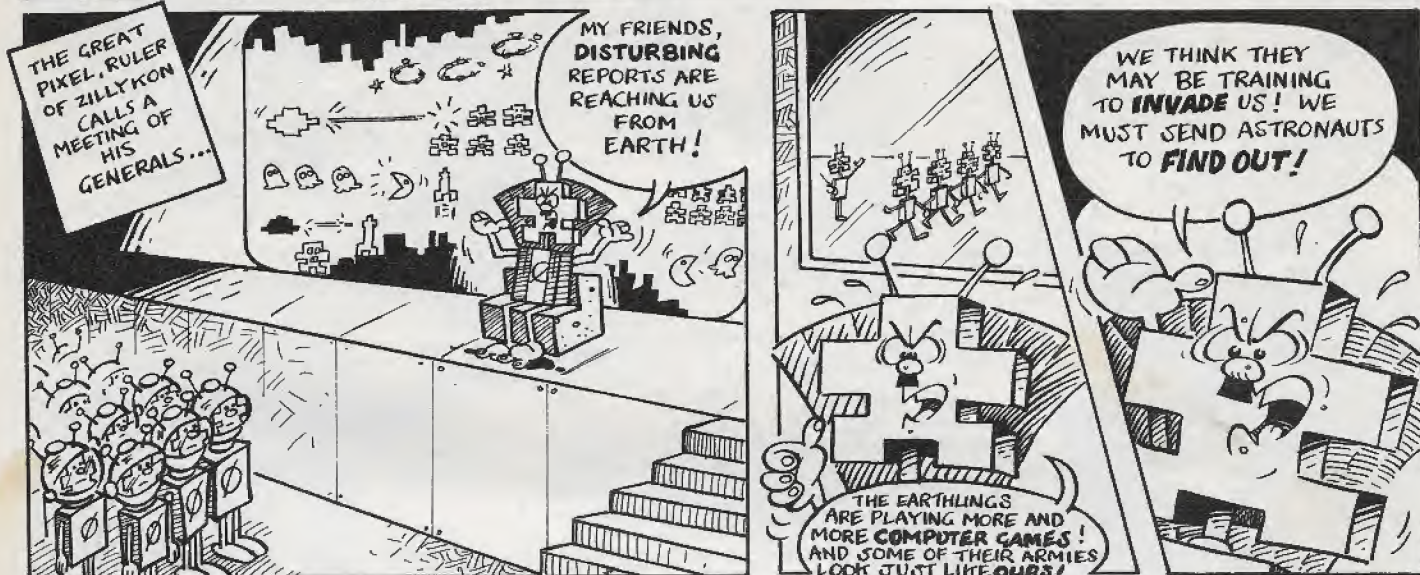
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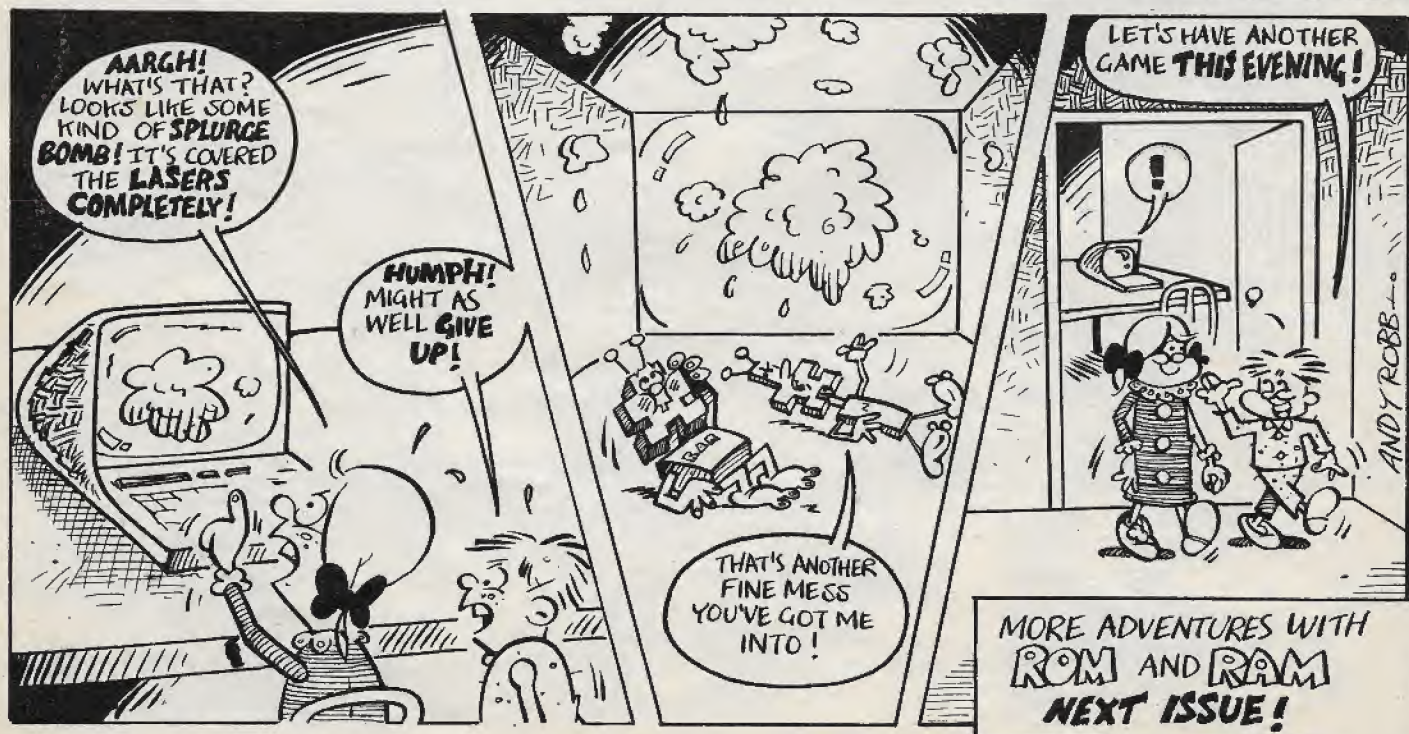
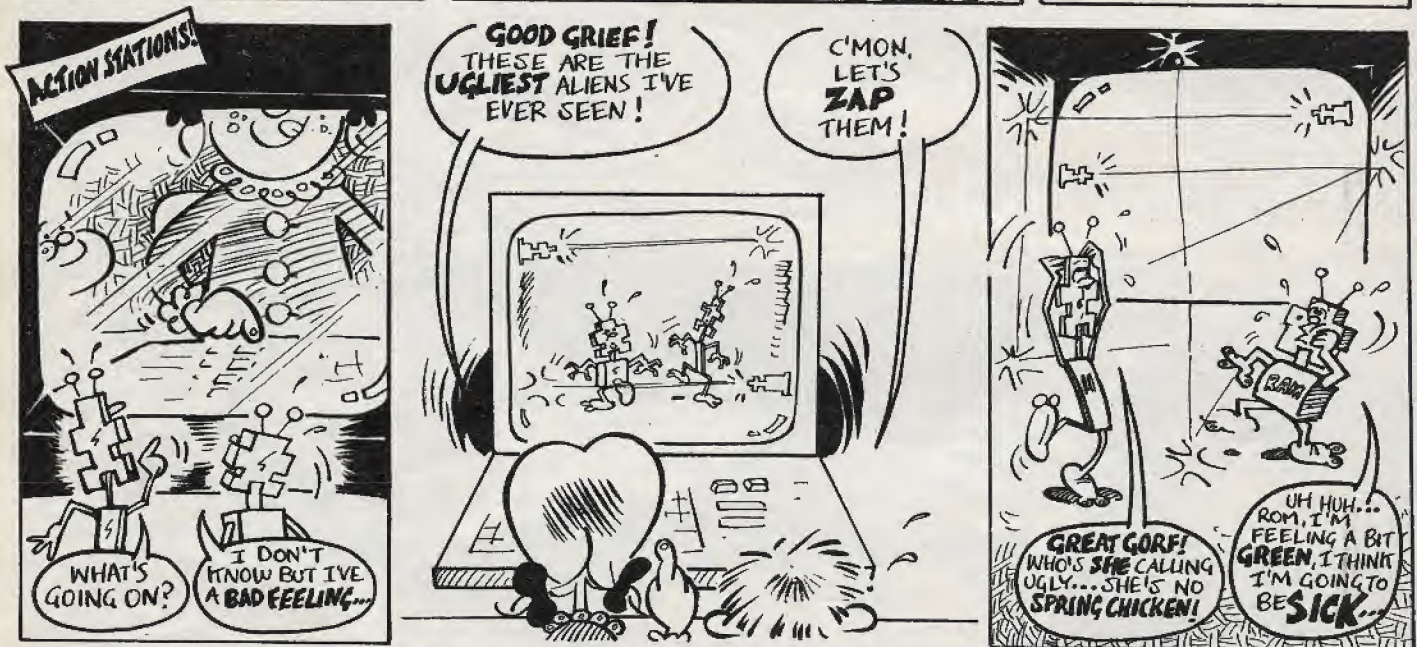
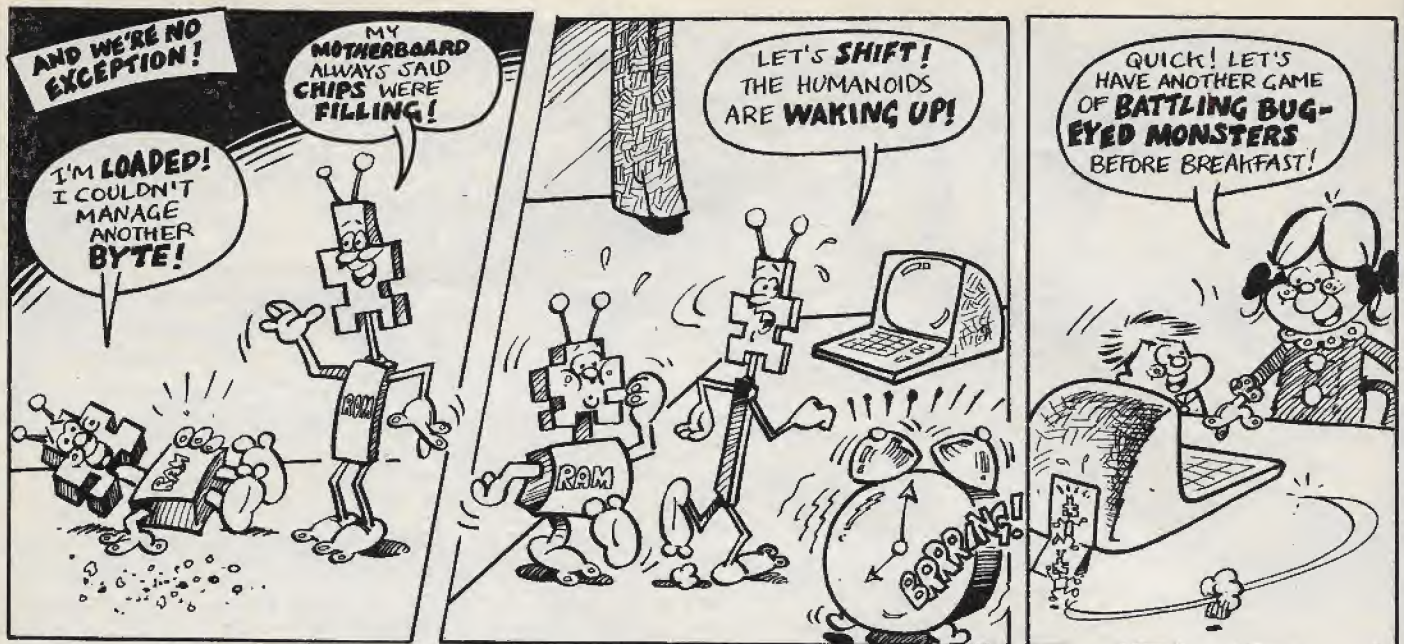
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VISION STORE 3 Eden Walk Precinct,
Kingston-on-Thames, Surrey.
Tel: 01-546 8974

THE ADVENTURES OF ROM AND RAM







HI ! I'M BRAINY and I really rate computers. The biggest problem is buying the right one, so here's the first of my Brainbox guides.

I'm going to be a Load Runner every issue so write to me at 30-31 Islington Green, London N1 and I'll do my best to answer any questions you have. Believe me, no problem is too small . . . I can tell you why you should convince your dad to invest in a computer or I can end your Loading problems.

Remember, Brainy's the name and, by the way, I will pay £1 to anyone who's name is mentioned. Write away!

Choosing a Computer

AS WITH most things, the choice of which home computer to buy depends on the use. If you wished to play World Cup Soccer, you would not buy a cheap plastic ball. Similarly if you want to play games which are as good as those in the arcades there is no point in buying a ZX-81, the cheapest computer.

Before looking at any of the ever-increasing number of machines, it is best to take a pen and paper and write what you expect from your computer. Things which are usually important are how easy it is to use—does it have a simple keyboard? Can it be programmed easily? What software is available and what is the cost?

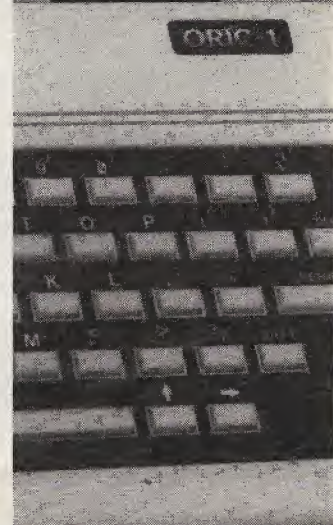
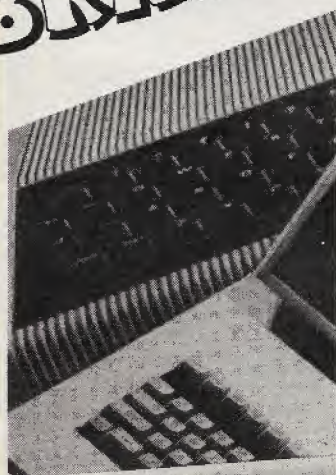
Against that look at what the computers have to offer. As a rough guide the more memory a machine has the better, and the more expensive it is the better it is. For example, a 1K ZX-81 costing less than £50 does not have the same abilities as a 16K Oric or Spectrum costing less than £100. Neither of those is as good as the BBC Model B computer which costs almost £400.

There are, however, a number of machines costing less than £200 which have broadly similar capabilities and it is for you to decide which suits you best. Features which most people find important are ease of loading pre-recorded cassettes, quality of colour and graphics, and the amount of software and hardware support available.

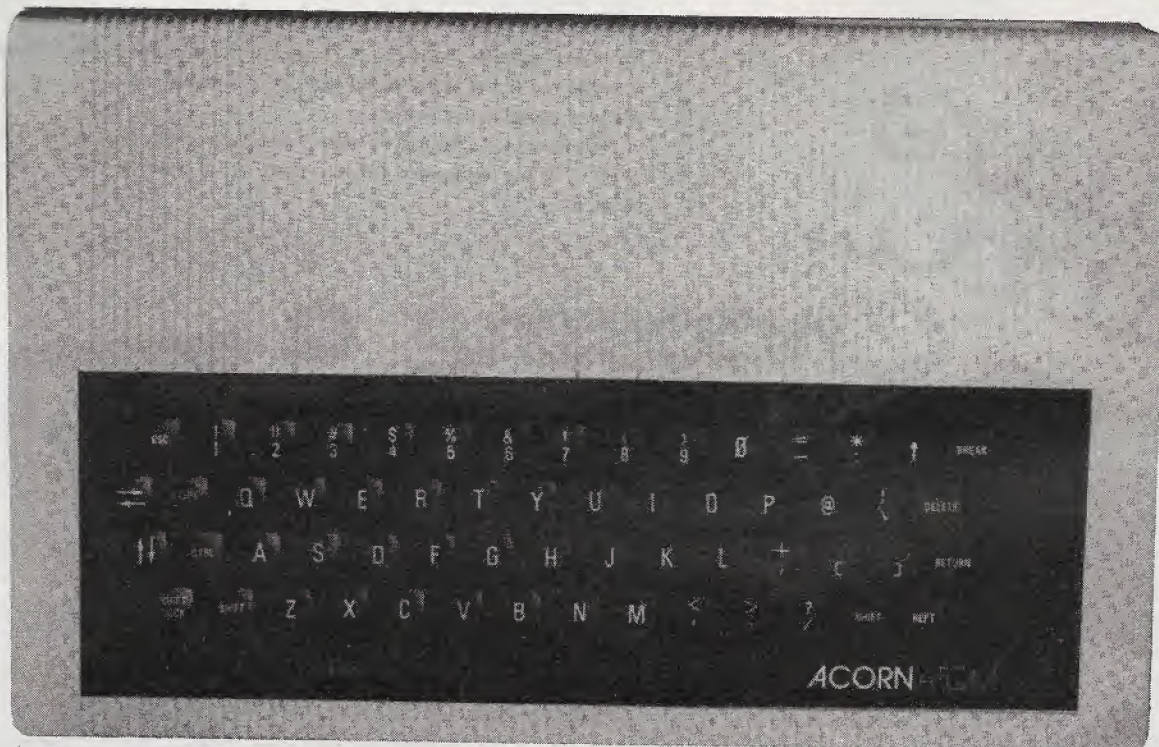
If all that seems a little vague, it must be because of the great range of uses people make of their computers. At one end there is the person who knows nothing about computers and wants to learn a little about what they can do but does not want to play games or put an entire collection of records on file.

The basic 1K ZX-81 would be perfect for that person. Its keyboard can be difficult to use, its graphics are poor and it has a limited memory, but it is still a computer. At the other end of the scale there is the person who runs a small business and wishes to play arcade-quality games for whom an Apple II or Commodore Vic would be the answer.

Once you have done all that, make a list of your preferences. Because you think a machine is perfect for you does not mean that you can go to the nearest electrical shop and buy one. You may have to wait, so be prepared to accept something less than ideal for the benefit of taking it home immediately.



Acorn Atom



Price	kit	£120
	assembled	£150
Numbers sold		25,000-30,000
How sold		kit/assembled
Processor		6502
Standard RAM		2K
Expansion RAM	internal	12K
	external	32K
BASIC + operating system		8K in ROM
Display	black/white	16 lines x 32 characters
Tape recorder		Any cassette recorder
Backing storage		Disc drives

SOFTWARE

Acornsoft, 4A Market Hill, Cambridge
A + F Software, 830 The Hyde, Manchester, M1870

BOOKS

Time Data Ltd., 16 Hemmels, Laindon, Basildon, Essex.

COMMENTS:

The Atom was one of the first small computers to have a typewriter keyboard. It is the predecessor of the BBC microcomputer and can run BBC BASIC if an upgrade kit is bought. This kit can be found at most Acorn stockists.

Unfortunately the Atom is a black and white display computer and an upgrade kit is required. This comes in the form of a colour board.

The machine is to be withdrawn in September when production stops. Books and software will still be sold and those who own an Atom should still be able to find information on their machines from computer magazines and comics.

ACORN COMPUTERS

4A Market Hill,
Cambridge.

Tel: 0223 245200

THIS IS A WORLD. IT IS A WORLD OF BEAUTY AND WONDER... A WORLD OF LIGHT. IT IS CALLED...

TRUMBULL'S WORLD

IT IS **NOT** THE REAL WORLD.

NO, **THIS** IS THE REAL WORLD. THERE IS NO WAR. THERE IS NO **ESCAPE**.

DON'T **PUSH** ME!! WHY ARE YOU **PUSHING**?

GET OUT! YOU DON'T BELONG HERE!

PROGRAMMER TRUMBULL SITS AT CENTRAL CONTROL.

SCRIPT —
ROB BEATTIE
ARTWORK —
MALCOLM STOKES
LETTERS —
STEVE POTTER

WONDERING IF HE SHOULD TELL THE WORLD...

I **MUST** TELL THEM. IT WILL GIVE HOPE TO THE **MILLIONS** WHO LIVE IN THE CITY.

... TO THE OVERCROWDED **BILLIONS** ALL OVER THE **WORLD**.

SIGNING OFF TO SYSTEM, CODE FOR TRUM. 6711e.

MEANWHILE... IN THE GOVERNMENT'S **HALL OF INNOCENTS** THERE IS **DISCUSSION**...

SO, IT IS AGREED, WE HAVE APPROVED THE APPOINTMENT OF **CAN** TO WATCH OVER THE TRUMBULL SITUATION.

AGREED.

YES.

YOU HONOUR ME.

RESPONSE TO **TRUMBULL'S** NEWS IS EXCITED...

WHY DIDN'T HE SAY WHEN IT'LL BE FINISHED. I THINK WE'VE GOT A **RIGHT** TO KNOW.

IMAGINE BEING ABLE TO JUMP TO ANOTHER **GALAXY!** TO HAVE SPACE TO MOVE, **REALLY** MOVE.

ONCE AGAIN, **PROGRAMMER TRUMBULL**, AFTER HIS EXTRA-ORDINARY ANNOUNCEMENT, HAS REFUSED TO COMMENT ON A POSSIBLE DATE OF DISCOVERY. A SPOKESMAN FROM THE **HALL OF INNOCENTS** CLAIMED THAT RESEARCH INTO THE PROJECT HAD BEEN PREPARED, AND FUNDED, BY THE GOVERNMENT. THIS HAS BEEN **JILLIAN DEVANT**. GOOD MORNING.

AFTER MONTHS OF WORK, **TRUMBULL** IS CLOSE TO THE ANSWER...

I'M BEING WATCHED. BUT WHO BY? I'LL HAVE TO BE CAREFUL. PERHAPS I BROKE THE NEWS **TOO SOON!**

THE COUNCIL IS DISPLEASED...

CAN YOUR PROGRESS HAS BEEN SLOW.

SIMIAN I AM WARY OF PUSHING **TRUMBULL** TOO HARD. HE KNOWS THAT WE ARE WATCHING.

NEVERTHELESS, THE WATCH ON **TRUMBULL** MUST BE STEPPED UP. IF HE FINDS THE EQUATION, WE MUST BE THE FIRST TO HIM. **EMES**, HOW ARE THE SYSTEM BREAK PLANS?

SIMIAN IS IN NO MOOD FOR EXCUSES.

TRUMBULL WORKS ON THE EQUATION THAT WILL LIBERATE MANKIND.

HOW'S IT GOING?

IT IS HARD, **SIMIAN**; **TRUMBULL'S** SYSTEM PROTECTION ROUTINES ARE VERY COMPLEX. I NEED MORE TIME IF I AM TO...

GOODNIGHT.

THERE IS NO TIME. YOU MUST MAKE ME THE TIME I NEED BY **BREAKING INTO HIS SYSTEM! IS THAT CLEAR?** I MUST HAVE THAT **EQUATION!**

QUITE WELL, I'VE ISOLATED NEARLY ALL OF THE CO-ORDINATES NOW. IT'S JUST A MATTER OF TIME.

TRUMBULL TRIES TO RELAX...



I NEED A REST. I'LL LOAD THE ADVENTURE PROGRAMME AND WORK ON THAT. IT'LL TAKE MY MIND OFF THINGS...

TRUMBULL RETREATS INTO THE ADVENTURE WORLD THAT HE HAS CREATED...

...A WORLD WHERE HE CAN ESCAPE.

THAT'S BETTER. THIS IS WHAT I NEED. WHAT SHALL I DO NEXT, A MAZE OR ANOTHER RIDDLE?

MEANWHILE THE REAL WORLD WAITS, AND THE WEEKS PASS.



TRUMBULL HEARS THE SOUND OF RUNNING FEET.

...IN THE ADVENTURE WORLD!

I'M TIRED, AND WHAT FOR? DID I DO THIS FOR MY CHILDREN, OR FOR THOSE CREATURES THAT I KNOW ARE WATCHING ME...?

...AND THEY COME FOR ME NOW! WHERE CAN I HIDE IT?

THE DOOR'S LOCKED! USE THE LASERS!

MONTHS LATER, THE EQUATION IS FINALLY COMPLETED.



AS THE DOOR IS PEELED OPEN...



POP goes the MICRO

THE RECENT LAUNCH of the world's first computer pop discs by EMI and Island Records is an exciting beginning to what might well be a new era for the music and home computer industries.

The EMI-released single has a pop song, *Camouflage*, on side A, and three computer programs for the Sinclair ZX-81 on the B side. If side B is loaded into the computer memory and then the sound on side A is played, the lyrics will be displayed

on a TV screen in time with the music. That is not all. Side B also contains two games for the ZX-81, one for the 1K version and one for the 16K.

Camouflage is the brainchild of 27-year-old Chris Sievey, a pioneering figure in the music industry. He has recorded eight albums and 15 singles, all on the independent label Razz Records, and in 1980 was the first to release a full-length pop video film. He has also produced a 3D TV, which was displayed to the

public in 1981. He is obviously a musician to watch.

Hot on Sievey's tracks is ex-Buzzcock Pete Shelley with a similar gimmick on his latest LP, *XL1*, distributed by Island Records. It contains a computer program for the Sinclair Spectrum which, when loaded, provides graphics and song lyrics to accompany the music.

What will be the next development in this exciting field? Perhaps a Pac-man game to the tune of *Eat to the Beat* . . . Watch this space.

Chris, computer and Camouflage



IN ANY BIG CITY, ANYWHERE, THERE ARE THE ARCADES: FULL OF KIDS PLAYING THE MACHINES THAT TAKE THEM INTO THE INCREDIBLE WORLD OF VIDEO GAMES. HARMLESS FUN, WELL, UNTIL...

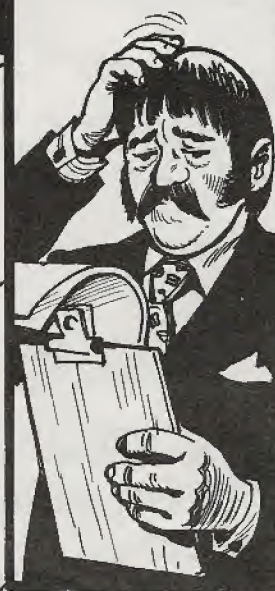
THE INVASION OF THE ARCADIANs



WELL, WHETHER YOU ORDERED IT OR NOT - 'ERE IT IS, GUV!

A NEW GAME IS SUDDENLY DELIVERED TO EVERY ARCADE FROM A NEW COMPANY NO ONE HAS EVER HEARD OF BEFORE!

mind warp

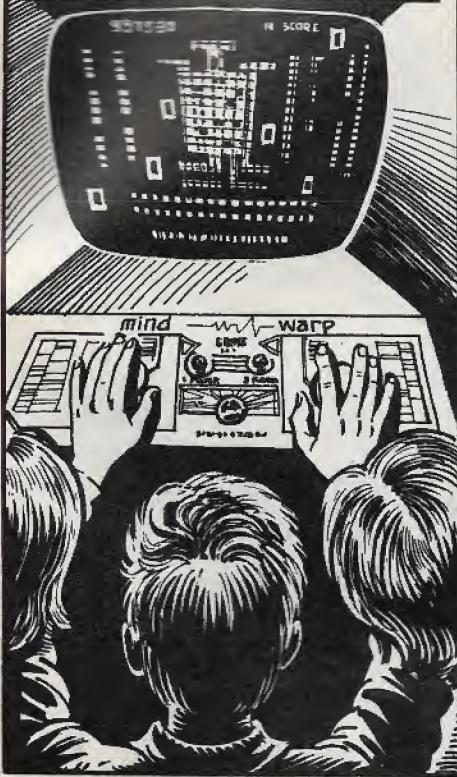


I DON'T KNOW WHERE IT CAME FROM, BUT IT'S CERTAINLY A WINNER!



SCRIPT —
LES COOKMAN
ARTWORK —
JOHN STOKES
LETTERS —
STEVE CRADDOCK

mind warp is a smash EVERYWHERE! THOUGH A HARD GAME TO BEAT AT FIRST, SOON IT WAS JUST ANOTHER GAME. UNTIL...



... A BOY PLAYING *mind warp* ON HIS OWN BECOMES AWARE OF SOMETHING STRANGE!

A WEIRD LIGHT FLICKERS FROM DEEP WITHIN THE MACHINE...



A HIGH PITCHED NOTE FILLS HIS EARS- AND HIS MIND!



THE SCREEN FLASHES UP "CLOSER"... AND HE HEARS IT SPEAK!

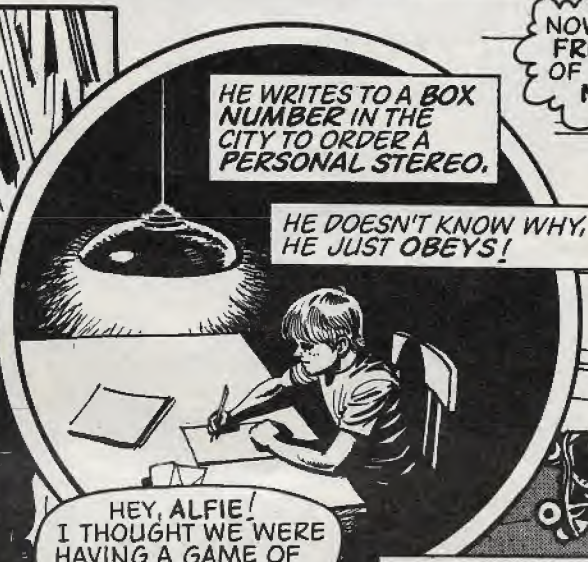


I MUST OBEY... I WILL OBEY!



HE WRITES TO A BOX NUMBER IN THE CITY TO ORDER A PERSONAL STEREO.

HE DOESN'T KNOW WHY, HE JUST OBEYS!



NOW TO FIND THE FRESH MINDS OF SOME EAGER NORMS!



HEY, ALFIE! I THOUGHT WE WERE HAVING A GAME OF TOAD SQUELCHER LATER!

WHEN HE GETS HIS STEREO (AT NO CHARGE!) HE FINDS LIFE NOW HAS A REASON. HE JUST OBEYS THE STRANGE SIGNALS FROM HIS HEADPHONES!

HE HAS GOT MATES WHO LIKE A GAME...



WANT TO TRY?

YEAH, I DON'T RECKON YOU GUYS COULD BEAT MY TOP SCORE ON MIND WARP.



THE FEVER SPREADS, THEY'RE CALLED DAZERS, THEY HUNT IN PACKS...

TO TURN ON THEIR NORM PALS TO mind warp, THE ULTIMATE GAME - AFTER ALL, WHAT HAVE THEY GOT TO LOSE...



TO BE CONTINUED!

HOW MANY of you know that computers are now used by almost all the Formula One teams in their bid to beat all comers in the grueling World Championship?

In this issue we feature the John Player Special Lotus, seven times world champions and maker of one of England's leading sports cars. This year it is using a 1,500cc turbo-charged Renault engine which will power its number one English driver Nigel Mansell to speeds of more than 200mph.

In the car, pictured below, a computer is fitted. It gathers information on the engine performance, recording oil pressure, temperature, fuel consumption and, most important, controls the cutting-in and out of the turbo.

It also monitors the complicated hydraulic suspension system and relays all its information instantly to a Hewlett-Packard 82 computer in the pits. That means the race manager can detect anything which is about to go wrong before it happens and can quickly call in the car.

That makes racing safer and more efficient. Before computers were used, many races were lost on the last lap by the leader running out of fuel and several drivers have crashed through suspension failure.

A Hewlett-Packard 98/85 is used to help make car models for future designs. It collects data from wind-tunnel tests to ensure perfect streamlining and to produce minimum drag. It also measures the weight of air crammed down on to the rear wheels by the spoilers.

Right: Nigel Mansell driving the computer car at Long Beach, California in March this year.

Formula One micro driving

*Motor racing today is safer
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The Software Workshop, Yew Tree, Selborne, Hants GU34 3JP





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[See 1-12 under ZX81]. 48K RAM
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I enclose a cheque/postal order for _____

Name _____

Address _____

(Allow 28 days MAXIMUM FOR DELIVERY)



COMPUTATIONS COMPUTATIONS COMPUTATIONS

TRACE the computer terms located in this screenful of computer data. To give you a clue, there are six to find and one of them can also be found in the explanation. Also one word is repeated. Which is it?

D F D P E S E D A
F L O T I N P U T
L X K A T R T A Y
E Z S M H A O E D
T R A C E N R B R
T U P N I R U N D
B D P T T E D Y L

IT TAKES a computer three minutes to execute 75 instructions using the Z-80 microprocessor chip at its heart. How long will it take to process 255 instructions?

THE LETTERS below were scrambled when we tried to print them with our printer. Can you find the four computer-related terms by re-arranging the letters of each string of characters? One of the items does not relate to computers. Which one?

SCASCE

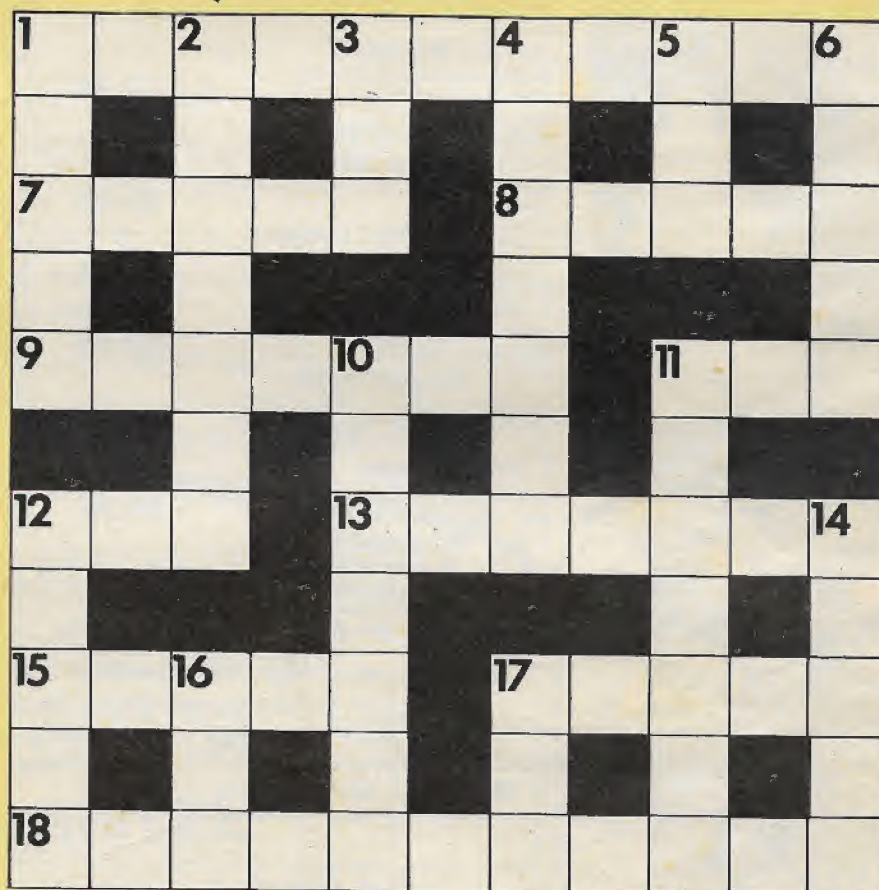
UTIPN

TOCUREPM

WDARER

ODLA

Wordplotter



Across

1. Readers of the first computer comic? (4,7)
7. Professional product of graphics system, I guess (5)
8. Tiny start to your treasure (5)
9. Jails for machines which overheat (7)
11. Article in another place (3)
12. Lettuce in the function list (3)
13. Gently stroke bird for a pretty display (7)
15. Go in for a carriage return (5)
17. Cheeky metal, perhaps (5)
18. What commercial users do to get computers (4,7)

Down

1. Lump of wood on a chip for the basis of computer action (5)
2. Things compared to non-digital computers (7)
3. American cheer in a program further ahead (3)
4. What the programmer first does to a new variable (5,2)
5. A common market (3)
6. American shop for micro data (5)
10. Sends overseas from input/output sockets (7)
11. Young ones' category (7)
12. Crystal-like instruction to get ready (5)
14. Loops inside others make pads for birds (5)
16. Touch of the sun is a function (3)
17. Public transport path for data (3)

Answers in next issue

Providing processor power to The Controller in publishing Load Runner were Bill Scolding (editor), David Hogan (advertisement manager) and Simon Ardizzone (administration). Chris Winch, Harold Mayes MBE, John Sterlicchi, Terry Cartwright and Richard Hease linked into the system. The corporate might of ECC Publications of 30-31 Islington Green was utilised continually. Print-out by Cradley Print PLC, Warley, West Midlands. ISSN 0264-8369.